



Product Specifications

WLAN 802.11b/g/n & Bluetooth 4.0 + HS Combo Module

Half mini Card Express

Model Number: WBC-40QR

Revision 1.0
April 11, 2012

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Introduction

This document is to specify the product WBC-40QR is an 802.11n wireless 1T1R Half mini-card that highly integrates IEEE 802.11b/g/n and Bluetooth 4.0+HS single chip wireless coexistence performance for your device. Once connected, it enhances coordination between WLAN and Bluetooth, with low power consumption, and excellent packet traffic arbitration into one processing chip.

Product Features

[Wi-Fi]

- Main chip : Realtek RTL8723AE WLAN+BT
- Compatible with 802.11n specification, wireless speed up to 150Mbps receiving and transmitting data rate (1T1R)
- DSSS with DBPSK and DQPSK, CCK modulation with long and short preamble.
- Support wireless data authorization and encryption with 64/128-bit WEP, WPA, WPA2, TKIP, AES, 802.1x, 802.11i and Cisco CCX standards for security
- Support 802.11e QoS Enhancement (WMM)
- Support 802.11h TPC, spectrum measurement

[Bluetooth]

- Bluetooth Specification V4.0+HS / V2.1+EDR compliant support
- Class 2 Bluetooth operations with full 7 slave Piconet support.
- Support Bluetooth Low energy
- Enhanced BT/WIFI Coexistence Control to improve transmission quality in different profiles

Product Specifications

Wi-Fi Product specification

Standards	IEEE 802.11b, 802.11g, 802.11n
Main chip	Realtek RTL8723AE
Frequency Band	2.4 ~ 2.4835 GHz ISM Band
Data Rate	802.11n : up to 150Mbps (Note: The actual throughput will vary depending on the wireless environment and other parameters) 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps
Antenna	2 * IPEX/Hirose (U.FL-R-SMT)
Security	802.1x, 64/128 bit WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, 802.1x, CCX
Driver support	Windows 7, Vista, XP
Interface	PCI Express 1.1
Power	3.3V +/- 0.3V
Temperature	0 ~ 70 °C (operating), -20 ~ 85 °C (storage)
Humidity	Max. 95% (non-condensing)

Bluetooth Product specification

Standards	Bluetooth Class2 v2.1+EDR, v4.0+HS
Frequency Band	2.4 ~ 2.4835 GHz
Data Rate	up to 3Mbps
Channel	79 sub-channels
SIG Listing	Bluetooth SIG Controller Subsystem: B019019 RTL8723X Module
Interface	USB 1.1/2.0
Power	3.3V +/- 0.3V
Temperature	0 ~ 70 °C (operating), -20 ~ 85 °C (storage)
Humidity	Max. 95% (non-condensing)

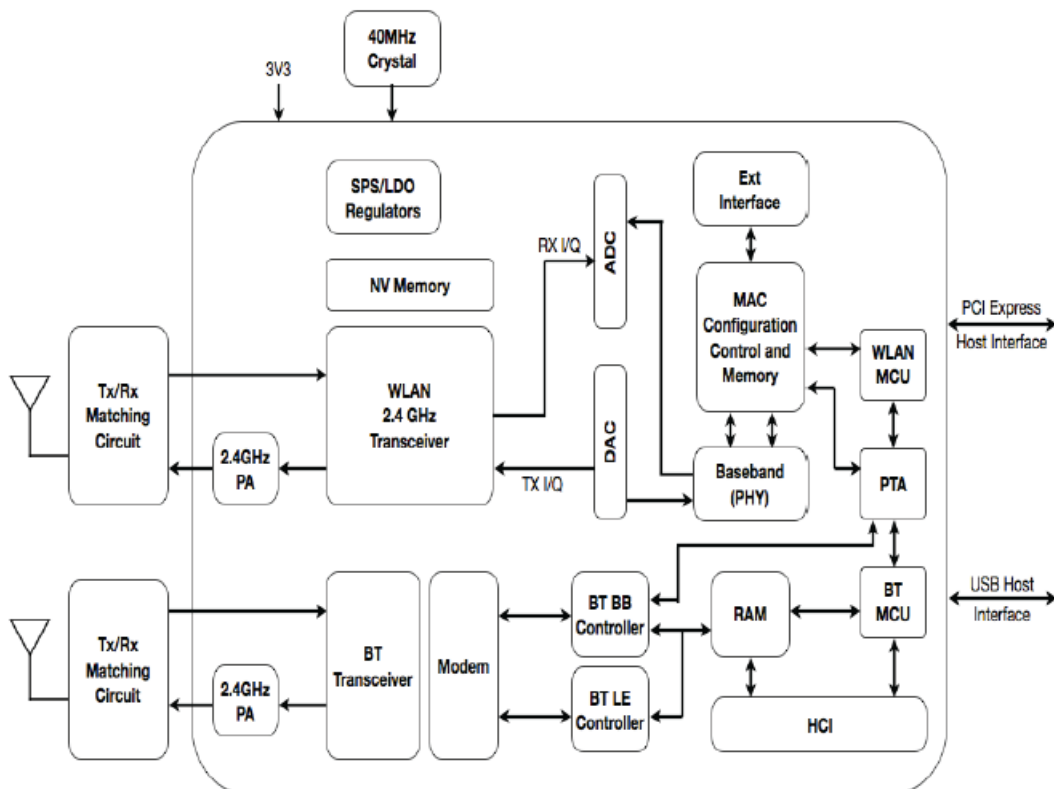
RF Characteristics

TBD

LED status

TBD

Block Diagram



Pin Definition

PIN #	SIGNAL	PIN#	SIGNAL
1	WAKE#	27	GND
2	3.3V	28	RESERVED
3	RESERVED	29	GND
4	GND	30	NO CONNECT
5	RESERVED	31	PETn0
6	RESERVED	32	RESERVED
7	CLKREQ#	33	PETp0
8	NO CONNECT	34	GND
9	GND	35	GND
10	RESERVED	36	USB_D-
11	REFCLK-	37	GND
12	NO CONNECT	38	USB_D+
13	REFCLK+	39	NO CONNECT
14	NO CONNECT	40	NO CONNECT
15	GND	41	NO CONNECT
16	NO CONNECT	42	NO CONNECT
17	NO CONNECT	43	GND
18	GND	44	LED_WLAN#
19	RESERVED	45	NO CONNECT
20	W_DISABLE#	46	LED_WPAN#
21	GND	47	NO CONNECT
22	PERST#	48	RESERVED
23	PERn0	49	NO CONNECT
24	NO CONNECT	50	GND
25	PERp0	51	BT_DISABLE#
26	GND	52	+3.3Vaux

Pin#51 : Control to Enable/disable Bluetooth radio

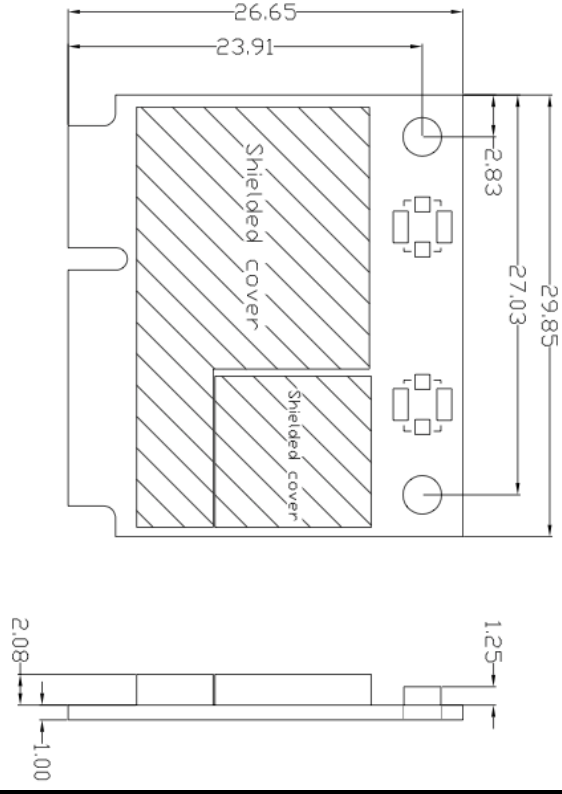
Pin#20 : Control to Enable/disable WLAN radio

Pin#44 : LED signal for WLAN (Active Low)

Pin#46 : LED signal for Bluetooth (Active Low)

Mechanical Drawing

Dimension: 29.85 (L) x 26.65 (W) x 3.08 (H) mm



Antenna connector

Connector	Vendor	Part #
Antenna * 2	I-PEX or Hirose	I-PEX: 20279-00E-01 Hirose: U.FL-R-SMT-1(10) Or compliance